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ABSTRACT

This profile summarizes the responses of 20 managers of rural business incubators, reporting on their operations, entry and exit policies, facility promotion, service arrangements and economic development outcomes. Incubators assist small businesses in the early stages of growth by providing them with rental space, shared services, management and business assistance, and an entrepreneurial environment. The number of U.S. business incubators has increased from 40 in 1983 to 271 in March 1988, the majority of them being in smaller rather than larger urban areas. Findings show academic institutions managed 55% of all rural incubators, with nonprofit organizations accounting for another 40%. Entry policies for rural incubators are similar to those for incubators nationally. Half of the facilities had formal exit policies. Rural development rates, measured in occupancy and incubator milestones, were lower than national averages. Recruitment of entrepreneurs is a problem facing all incubators, but especially for rural projects. The most effective recruitment method reported was individual contact. Assistance most used by tenants were accounting, marketing, business plans, and government grants and loans. Services were paid for using tenant reimbursements, donations, and professional fee reductions. It is concluded that, while incubators contribute to community development, the process has been slow and risky. Rural educational institutions are taking a disproportionate part of this risk and their continued involvement in incubator development is crucial. Subsequent research must resolve policy and management questions concerning strategies for incubators. The paper includes tables, endnotes and a sample list of rural incubators. (TES)

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RURAL INCUBATOR PROFILE

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Prepared for the Second Annual Conference of the National Business Incubation Association, April 29-May 3, 1988, Dallas, Texas.

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INTRODUCTION

The number of business incubators in the United States has grown from 40 in 1983 to 271 as of March 1988. Business incubators assist small businesses in the early stage of growth by providing them with rental space, shared office services, management and business assistance, and a creative entrepreneurial environment. Approximately 60 percent of incubators are located in urban areas, 23 percent in suburbs, and 17 percent in rural areas. The majority of incubators are located in smaller rather than larger urban areas; 44 percent of all incubators are located in cities with less than 30,000 population (1). Approximately 40 incubator facilities are located in rural areas, those communities with less than 25,000 population in non-metropolitan areas.

Incubators are an important economic development tool for new firm start ups in rural areas. Edward J. Malecki has identified four important factors which influence new firm formation, availability of start up capital, entrepreneurial climate, information networks, and innovation. According to Malecki, rural America possess some but not all of the factors that foster high rates of growth and faces shortages in other areas (2). While many rural communities face certain disadvantages in incubator development, including a limited entrepreneurial pool, availability of public and private capital, and public and private infrastructure (3), incubators can be an important component of a local strategy for new firm formation. Incubators increase the availability of start-up capital through formation of seed capital funds, act as a source or the sole source of entrepreneurship in rural communities, develop business enterprise networks which function as information networks for entrepreneurial development, and promote business innovation. The purpose of this study is to profile the business incubator industry in rural areas.

Rural Incubator Profile

This profile summarizes responses of a sub-sample of 20 incubator managers reporting on the operation of their facilities. These individuals operate incubators in communities whose population ranges from 1,685 to 35,863. All communities are located in a non-metropolitan area (4). The sub-sample was drawn from data collected on 127 facilities in national study of the business incubator industry conducted by David N. Allen and Mary Ann Dougherty. The purpose of the national study was to examine the state-of-the-industry general practices and trends across incubator facilities.

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The profile examines the information organizational arrangements, entry and exit policies, developmental process, service and assistance arrangements, facility promotion, and economic development outcomes of rural incubators. Results of the national sample are presented with the rural data where appropriate (5).

Organizational Arrangements

Incubators are owned and/or operated by universities and other educational institutions, non-profit organizations, private for-profit corporations, public entities and public/private partnerships.

Table 1
Type of Ownership and Operation

	(N=20)	(N=127)
Ownership and Operation	Rural Incubators*	National Sample
For-Profit	0%	25%
Nonprofit	40	42
Public-Private Partnership	5	18
Academic	55	15

*Percentages refer to incubator ownership for rural incubators and for a cross tabulation of ownership and operation for the national sample.

As shown in Table 1, academic institutions owned and managed 55 percent of all facilities in rural areas with nonprofit organizations accounting for 40 percent. Five percent where public/private partnerships and none of the facilities reporting were private for-profit entities. Educational institutions including universities, community and technical colleges own and operate a far larger percentage of incubators in rural areas than nationally. Private for-profit incubators are under-represented in this sample. An earlier study reported that 17 percent of rural incubators were owned and operated as private for-profit facilities.

Entry and Exit Policies

Entry policies are similar for most rural incubators in terms of the types of firms that would be considered for admission to the facility.

Table 2
Types of Business Acceptable for Admission
(N=20)

Types of Business	Frequency	Percentage
Light Manufacturing	18	90
Commercialized High-Tech Products	17	85
Research and Development	16	80%
Service-Oriented	13	65
Mail Order	9	45
Nonprofit	8	40
Wholesale	6	30
Heavy Manufacturing	5	25
Retailing	3	15

As shown in Table 2, most rural incubators accepted "high value" businesses including light manufacturing, high-tech, and research and development firms. Over half of the facilities also accepted service-oriented firms which can be an important component of local rural economies (6). Entry policies for rural incubators are similar to those for incubators nationally.

Half of the facilities have formal exit policies. The most important factor for determining exit from the facility was length of occupancy. Forty percent of those facilities with a formal exit policy, based the policy on length of occupancy. Number of employees, business profits, and space and facility needs, were not important determinants of exit policy. Twenty-five percent of the facilities had an "implied" exit policy based on a graduated rent structure which was used to encourage tenants to relocate.

Developmental Process

The national study addressed two aspects of the incubator development process, achievement of incubator milestones, and occupancy rates. Incubator milestones were measured in terms of the number of months from the incubator's initial start-up plan to the grand opening, initial space preparation, first tenant, shared support services provided and professional services provided. Only occupancy rates are reported for the rural facilities.

Occupancy rates were measured at different points in time, opening day, 6 months, 12 months, 18 months, 2 years, 3 years, and 4 years. Thirty-five percent of the incubators reported no tenants on opening day. This rate is higher than the national average of 25 percent. The average amount of leasable space on opening day was 24.5, with 3 facilities reporting 100 percent pre-leased. By the end of 18 months the median percentage of leased space was 50 percent. Table 3 presents summary data on the percent of leasable space occupied by tenants in the incubator over time. In general, development rates for rural incubators lag behind national averages.

Table 3
Percent of Space Leased Over Time
(N=20)

Category	N	Mean	Median	Std. Deviation
Opening Day	19	32.9	10	52.5
6 Months	19	41.9	30	34.8
12 Months	16	56.0	50	26.4
18 Months	15	57.0	50	25.5
2 Years	8	60.0	60	23.8
3 Years	7	53.8	50	31.5
4 Years	4	86.2	90	17.0

Facility Promotion

One of the most common problems facing incubators is recruitment of entrepreneurs. This problem is especially critical in rural areas. In a previous study of rural incubators (7) incubator managers identified a lack of clientele and entrepreneurial pool for new business start-ups as the major challenge facing the incubator. In the study, respondents were asked how they promoted the incubator, and how tenants found out about the facility. Individuals were asked to rate the effectiveness of brochures or pamphlets, television and radio advertising, mass media coverage, public speaking engagements, and individual contacts and networking, for the development of support for the facility. By far the most effective method for building support for the incubator was the use of individual contacts and networking techniques. Television and radio advertising was viewed as the least effect measure of promoting the incubator, and mass media coverage, public speaking engagements, and the use of brochures and pamphlets was viewed as moderately effective. On average respondents spent 15 percent of their time on promotional activities.

Respondents were also asked to rate the effectiveness of various methods of tenant recruitment. The informal external network of the incubator was reported to be the way that tenants most often found out about the facility. Eighty five percent of the managers stated that tenants mostly or most often found out about the incubator through informal external networks. Potential tenants were least likely to find out about the incubator through conventional advertising sources. These findings are consistent with results from the national sample.

Incubator Services

The incubators offer a wide variety of shared office and business assistance services to clients and many services are available to the clients through the external service network of the incubator. Shared services and business assistance is often included in the rent, or clients pay for the service on a fee basis. In some cases, the incubator and tenant divide the cost of the services or services are covered in the rent with the client paying for the service above a certain level. Table 4 shows the types of services available at the facilities and the method of client payment for the service. Of the services provided, conference room, receptionist, security and business library services were most often included in the rent. Photocopying, word processing, and additional storage were most often paid as a service charge or fee.

Table 4
Provision of Shared Support Services
Provided by Incubator
(N-20)

Category (Frequency)	Included in rent	Paid as Used	Divided Cost
Photocopies	3	15	3
Office Equipment/Furniture	6	4	3
Conference Room	16	2	2
Receptionist	10	0	2
Computer facilities	5	6	1
Word Processing/Typing	6	11	1
Security	17	0	1
Business Library	11	0	1
Additional Storage	4	11	1

Respondents were asked about the provision of business development assistance to tenants. Table 5 shows the types of business development assistance available at the incubators and whether the assistance was offered in the incubator or by an external network. Marketing, business plan, government grants and loans, and debt and equity financing assistance was most often available in-house. Accounting, marketing, computer training, legal services, debt and equity financing, and patent assistance were most often provided through external networks.

The four types of business assistance most used by clients included accounting, marketing, business plans, and government grants and loans. Marketing and legal services were listed as the services most needed but not available through the incubator.

Table 5
Business Development Assistance Available through Incubator
(N-20)

Category (Frequency)	In-House	External Network
Accounting	7	15
Marketing	10	11
Business Plans	14	4
Computer Training	6	10
Legal Service	1	14
Government Procurement	4	8
Government Grants & Loans	10	6
Business Taxes	5	9
Equity & Debt Financing	9	11
Patent Assistance	4	11
Research & Development	4	7
International Trade	1	8

Table 6 present information on the method of payment for services provided by the external service network. The most frequent arrangements for the cost of externally provided assistance was tenant reimbursement for all costs (55 percent), donation of professional services (50 percent), and reduction of fees by professionals (45 percent).

Table 6
Charges for Services from External Network
(N-20)

Cost Arrangement	Frequency	Percentage
Tenant Provides Total Reimbursement	11	55
Professional Donates Services	10	50
Professional Provides Reduced Fees	9	45
Professional Charges Full Fees	5	25
Incubator Provides Total Reimbursement	3	15
Tenant & Incubator Divide Reimbursement	2	10

Economic Development Outcomes

Incubator economic development outcomes are typically measured in terms of job and business creation, though other economic development outcomes are also important. The average number of tenants per facility was 6.8 with a median of 3.0 indicating that two of the larger facilities tended to skew this average. The average number of jobs per facility was 46 with a mean of 33.5. Nationally the average number of tenants per facility was 20 with a median of 10 tenants, and 169 jobs per facility with a median of 52. Using the average number of 6.8 and average number of jobs per facility at 46, the average number of jobs per tenant business was 6.8 compared to an 8.5 national average.

Conclusion

This paper has presented a profile of incubators in rural communities. Incubators contribute to the new firm start up process through promotion of an entrepreneurial climate, development of information and business assistance networks, seed capital funds, and innovation process. However, incubators involve risk on the part of sponsoring organizations. As shown in this data, and as reported in the national incubator study, incubator development is often a long and slow process. Educational institutions in rural areas are taking a disproportionate part of this risk, and their continued involvement in rural incubator development is crucial.

How do we facilitate incubator and new business development in rural areas? Several policy and management questions must be addressed in subsequent research.

1. What is the proper role for government (federal, state, and local), public and private corporations, and foundations in rural incubator development? What are the best mix of services these entities can provide to enhance rural incubator development?

2. What is the appropriate funding mechanism for rural incubators? What is the proper mix of capital and operating subsidy, and how long should rural incubators receive public subsidy? Do rural incubators require greater assistance than incubators in urban areas? What is the appropriate basis to award public funds to rural incubators?

3. What is the best method to link incubator development to state and local entrepreneurial strategies?

What other incubator strategies should we consider for rural areas?

1. Are satellite centers, multi-county incubator programs, corporate partnerships, and "incubators with walls" useful alternatives.

2. To what extent can incubators provide employment alternatives for displaced farmers?

Acknowledgements: The author would like to thank David N. Allen and Mary Ann Dougherty for provision of data on rural incubators from their national survey results and Kamal Alvi for computerization of the data.

Endnotes

1. Raymond W. Smilor Michael D. Gill, Jr. The New Business Incubator Lexington, MA: Lexington Books, 1986.

2. Edward J. Malecki, "New Firm Startups: Key to Rural Growth," Rural Development Perspectives 4 (February 1988): 18-23.

3. See, "Business Incubators Give New Firms in Rural Areas a Head Start," Rural Development Perspectives 3 (February 1987): 6-10; "Opportunities and Constraints in Rural Communities for the Successful Development of Small Business Incubators," Proceedings from the National Rural Entrepreneurship Symposium Mississippi State University: Southern Rural Development Center, August 1987.

4. A list of the facilities surveyed and population for each community is reported in Appendix A. While community population exceeded 25,000 in some cases, all of the incubators surveyed were located in non-metropolitan areas and are included in this sample.

5. Figures are reported from David N. Allen and Mary Ann Dougherty, "The Business Incubator Industry in 1987," Carlisle, PA: National Business Incubation Association, July 1987.

6. Stephen M. Smith, "Diversifying Smalltown Economies with Nonmanufacturing Industries," Rural Development Perspectives 2 (October 1985): 18-21.

7. Mark L. Weinberg, "Opportunities and Constraints in Rural Communities for the Successful Development of Small Business Incubators," Proceedings from the National Rural Entrepreneurship Symposium Mississippi State University: Southern Rural Development Center, August 1987.

Appendix A

Rural Incubator Sample

Industrial Incubator
Atoka, OK
Population: 3,409

Reg. Sm. Bus. Inc. Facility
Ahoskie, NC
Population: 4,887

Innovation Center
Athens, OH
Population: 19,743

Columbus Enterprise Development Center
Columbus, IN
Population: 30,614

ADVOCAP Business Center
Fond Du Lac, WI
Population: 35,863

Highland Business Center
Freeport, IL
Population: 26,266

Hobbs Business Incubator
Hobbs, NM
Population: 7,245

Industrial Incubator
Hugo, OK
Population: 7,172

Cornell Industrial Research Park
Ithaca, NY
Population: 28,732

The Penn Center
Lock Haven, PA
Population: 9,617

Los Alamos Small Business Center
Los Alamos, NM
Population: 11,039

Skill Center Incubator
Marquette, MI
Population: 23,288

Science & Technology Resource Center
Marshall, MN
Population: 11,161

Meadville Industrial Condominium
Meadville, PA
Population: 15,544

UW-Stout Incubator Service
Menomonie, WI
Population: 12,769

Maple City Business and Technology Center
Monmouth, IL
Population 10,706

Bennington County Industrial Corporation
North Bennington, VT
Population: 1,685

Noble Center for Advancing Tech.
Okmulqee, OK
Population: 16,263

Soo Industrial Incubator
Sault Ste. Marie, MI
Population: 14,448

Small Business and Industry Center
Waynesville, NC
Population: 6,765

IDAHO INNOVATION CENTER

A Formula for Business Success

by Barry Brooks, Manager
Idaho Innovation Center

A permanent business incubator facility is planned to accelerate and to expand the promising economic results from the first 18 months of operation of Idaho's first small business incubator.

SMALL BUSINESS CREATES THE NEW JOBS: Small businesses account for most of the new jobs in the United States. Nationally, firms with less than 20 employees account for about two-thirds of all new jobs. In East Central Idaho, they account for 90% of all jobs. However, along with job creation potential, small businesses also have a high failure rate. Economic development literature often states that probably 4 out of 5 new business start-ups fail within their first four years. The reasons for small business failure are usually poor marketing, poor management, or lack of capital.

INCUBATORS / INNOVATION CENTERS AS A DEVELOPMENT TOOL: The small business incubator is an economic development tool that tries to reduce the failure rate of new business start-ups by offering affordable leased space, shared services and management support. An incubator is a "safe harbor" for new businesses during their most critical point of development — the first 1 to 3 years. An incubator reduces the initial overhead costs of new businesses (less than market rents, access to expensive office equipment, shared support services - secretary, telephone service, etc.).

THE IDAHO INNOVATION CENTER: A HOME FOR INEL "SPIN-OFFs": The Idaho Innovation Center incorporated as a non-profit in July 1986 and became a collaborative effort between local business, government, academic organizations, and INEL. The IIC and Bonneville County are full partners in planning for the purchase and management of a new permanent incubator facility. Business start-ups which commercialize technology developed at INEL will probably account for half of all incubator tenants.

A FORMULA FOR SUCCESS: The Idaho Innovation Center capitalizes on local resources — new "business spin-offs" from INEL's Technology Transfer Program and from the region's natural entrepreneurial talent. The "intellectual wealth" represented by the commercial potential of both of these sources can lead to new businesses that complement and diversify the regional economy which is primarily based upon natural resources — agriculture, timber and mining.

The Idaho Innovation Center has already demonstrated that the following equation is an effective economic development strategy:

IIC Incubator Space/Services
+
INEL Business Spin-Offs
+
Local Entrepreneurial Initiatives
+
Small Business Support Network
=
New Jobs and Economic Diversity

A recent community donation of 5 acres of prime commercial property in Bonneville County will allow the IIC to assist tenants to establish their own commercial buildings when they graduate and prepare for a high degree of job creation. This 5 acre parcel will be used for graduating tenants. The Gift Deed requires a tenant to build at least a 2,000 SF building and to be in full production within 5 years.

ECONOMIC IMPACT ALREADY REALIZED: The Idaho Innovation Center has already created considerable economic impact despite operating for just 18 months from 2 temporary locations:

- Half of all INEL developed technologies with commercial potential which were transferred by INEL in FY 87 led to new business start-ups in Idaho as IIC tenants.
- IIC has provided incubator space and services to 5 new business, 4 of which are advanced technology firms.
- IIC tenants have already leveraged $305,000 of private investment/venture capital and signed over $450,000 in contracts.

Jon Boisted, founder of Control Vision Inc., prepares the layout for a product brochure.

IDAHO'S FIRST INCUBATOR TENANT GRADUATES: IIC recently graduated the first incubator tenant in Idaho whose technology (which was developed while a tenant) will likely lead to over 18 new Idaho Falls jobs in the next 24 months. The Idaho Innovation Center is where Jeff Ricks, a local inventor and entrepreneur, developed his idea and founded his company, Omnitech. He invented an "electronic counter", a device used in coin-operated machines to track the use of the machine against money collected. The retail price of the new counter will be about $20, while its nearest competition costs $80. To bring the cost down, the inventor devised unique circuitry and software that can be used in both voice and object recognition. He also developed a single micro chip that replaces twenty-two chips. In February, Omnitech licensed its product to a local firm, Rammell Inc., which will manufacture and market it from Bonneville County. When Omnitech moved from the prototype and development stage to manufacturing and distribution, it became the first tenant to graduate from the Idaho Innovation Center.

CENTER ATTRACTS QUALITY BUSINESS START-UPS: Incorporating in 1986, Control Vision is a spin-off from INEL. The Weld Vision System allows video images of welding processes to be produced with clarity and contrast not previously realized. The technology behind Control Vision's Weld Vision System won a prestigious *1986 IR-100 Award*. These awards are presented annually by the editors of *Research and Development Magazine* for the 100 most significant technical products of the year. The winners are selected on the basis of the importance, uniqueness and significance from a technical standpoint.

Control Vision's first contract assisted in the quality control of weld systems for NASA's Shuttle Booster Rocket Program and recently signed a second contract with Rohr Industries.

PLANS FOR A PERMANENT LOCATION: In February 1988, the Idaho Innovation Center moved from the basement of the Idaho Falls Library to another temporary location at the University of Idaho/Sunnyside facility in Idaho Falls. The IIC is planning to acquire and renovate an existing commercial complex of 3 buildings in a campus-like setting adjacent to Idaho Falls in Bonneville County. The new site will accommodate the expanding needs of tenants for assembly, warehousing, shipping and light and heavy manufacturing space. Multi-purpose laboratory space will also be provided. Partial funding for the purchase and remodel of the new incubator facility has been secured with additional grant funding contingent upon community fund-raising efforts. Should local efforts be successful, it is likely that tenants can move into the new incubator facility as early as Fall 1988.

POTENTIAL ECONOMIC IMPACT: If the new permanent facility can be acquired, 5 year estimates indicate considerable economic impact. Based upon IIC's first 18 months of experience in incubator management and tenant recruitment, it is expected that 40 new business start-ups will graduate from the incubator. This figure already accounts for reducing the attrition rate of new business failure from 80% to 25%. If the average successful graduating tenant firm creates just 12 new jobs, then the direct job creation would be as high as 500 new jobs — jobs that probably would not have been created without the incubator or would have gone out-of-state. The potential for private investment in the 40 successful tenants is likely to be at least $2 million. Local purchasing by tenants will lead to additional economic impact.

The Idaho Innovation Center capitalizes upon local resources — INEL technology transfer and our region's natural entrepreneurial talent. Moving into a new permanent facility will assure the long-term success of the IIC to "incubate" new businesses which grow and create new jobs.

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